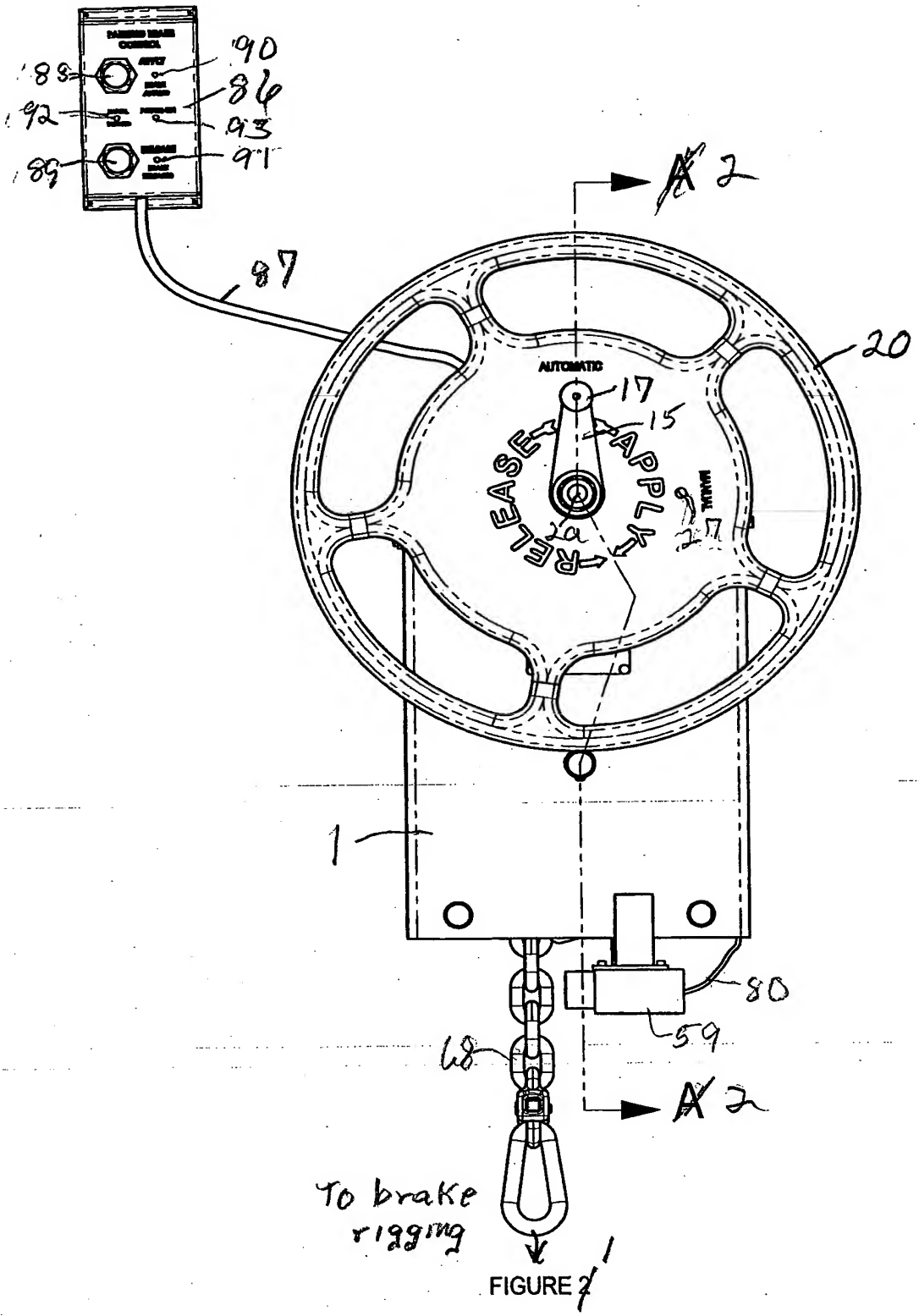

90
88
86
92
93
89
91
87
A
2
20
AUTOMATIC
17
15
APPLY
RELEASE
2a
27
1
80
59
48
A
2
To brake
rigging

FIGURE 2

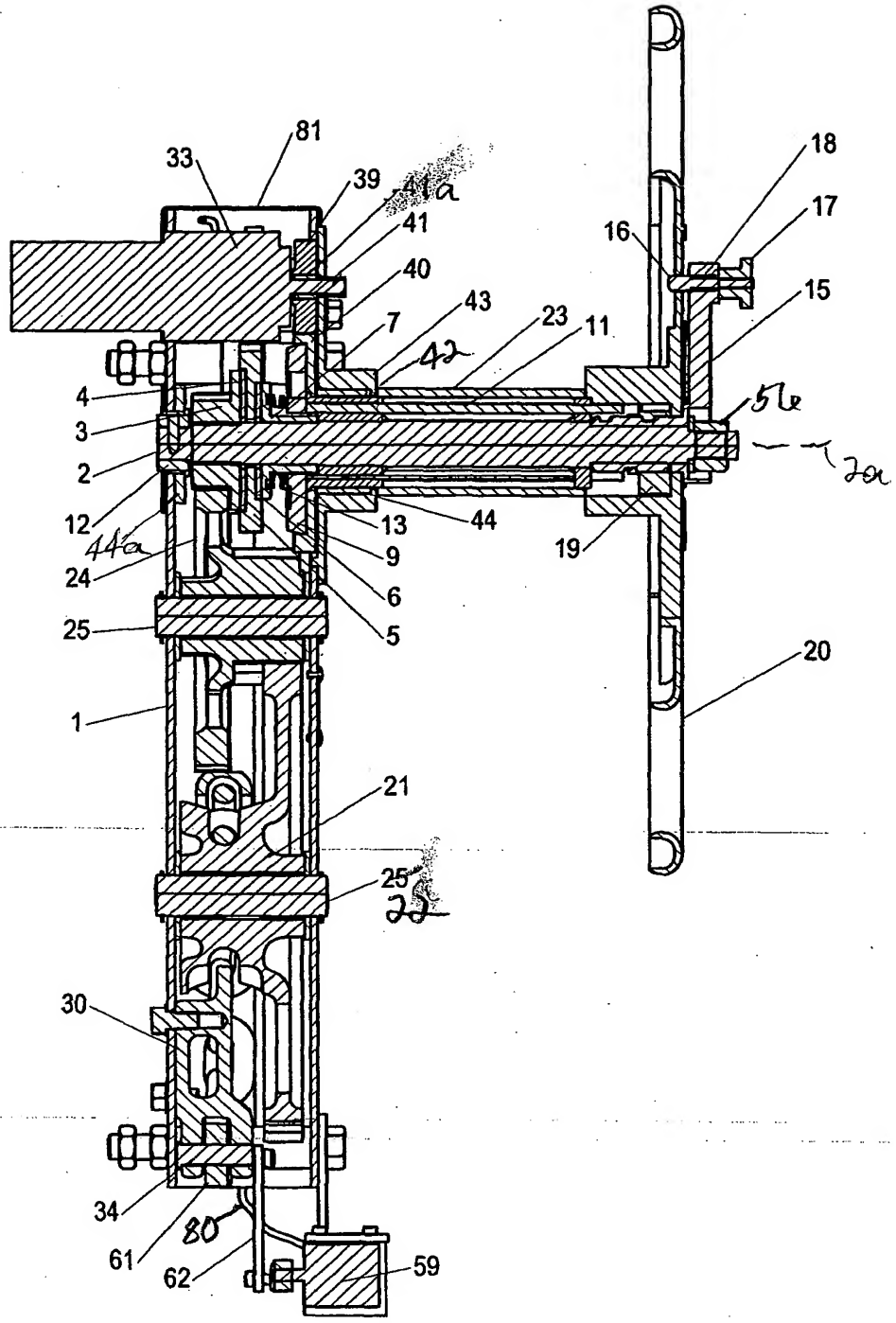


FIGURE 12
SECTION A-A

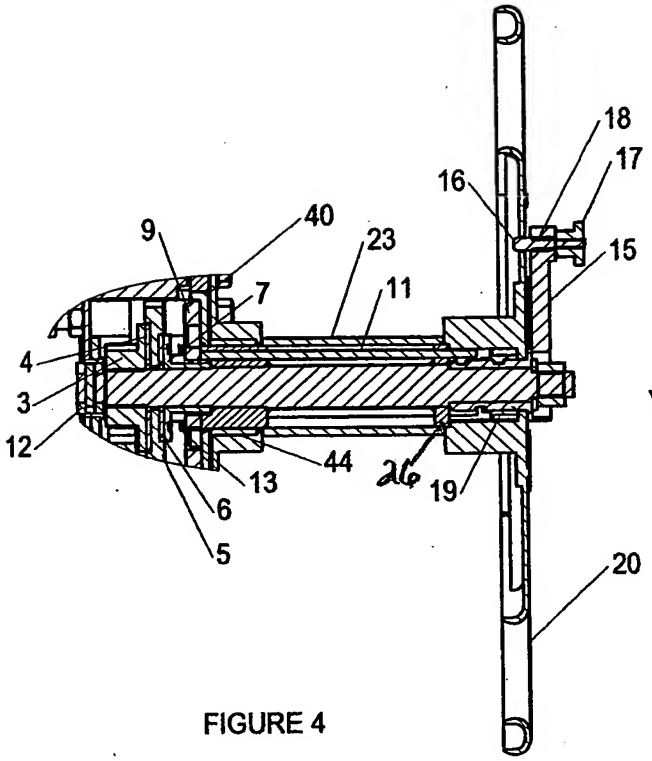


FIGURE 4

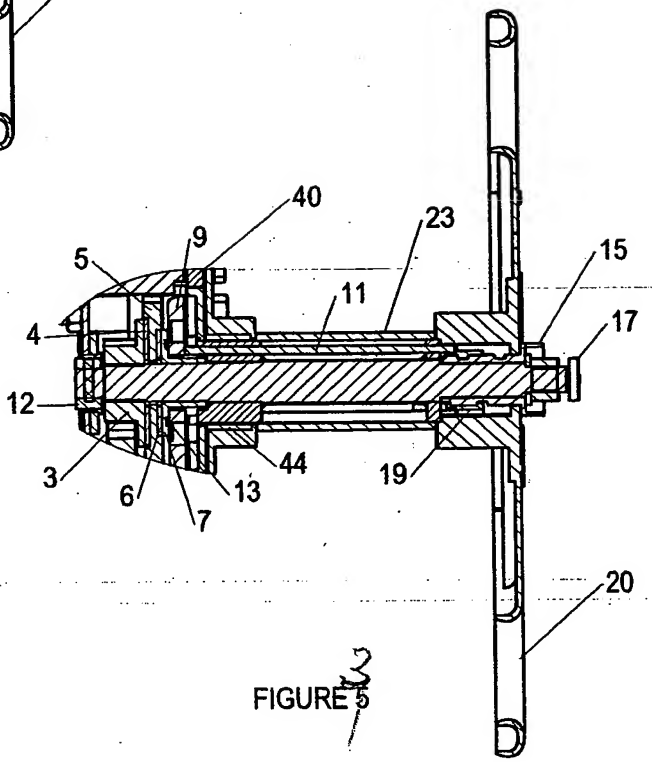


FIGURE 5

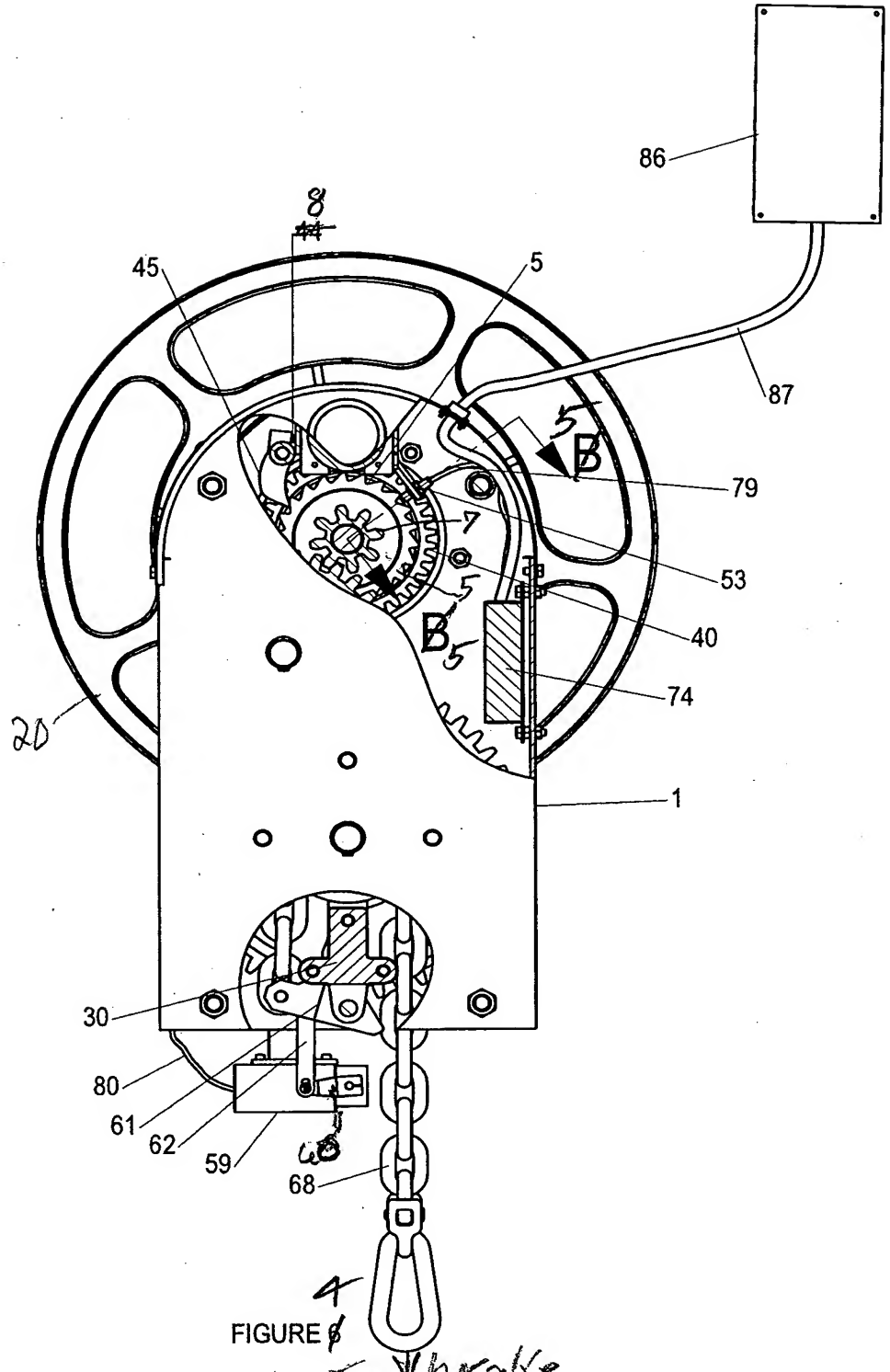

86
8
45
5
87
5
B
79
7
53
5
B5
40
74
20
1
30
80
61
62
59
68
4
To brake rigging

FIGURE 6

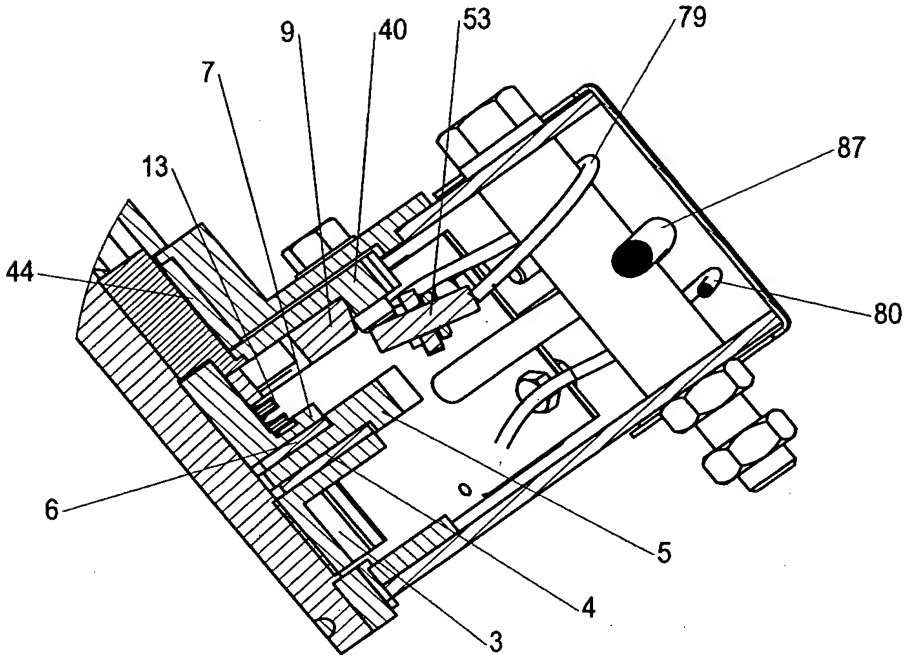


FIGURE 7 6
~~SECTION B-B~~

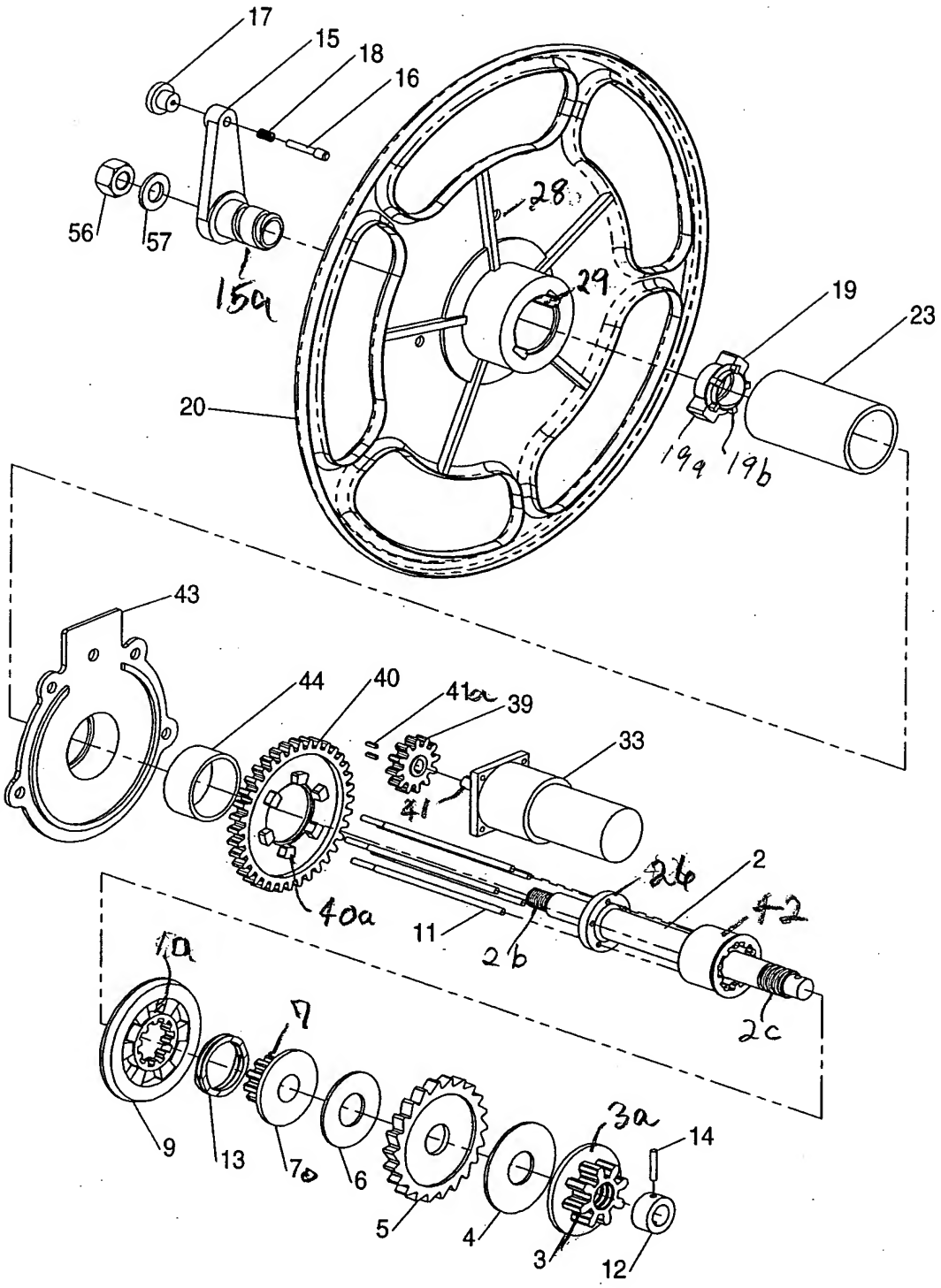

17
15
18
16
56
57
15a
28
29
19
23
20
19a
19b
43
44
40
41a
39
33
41
40a
11
2b
2b
2
42
2c
10
7
9
13
7a
6
5
4
3
3a
14
12

FIGURE 1

4

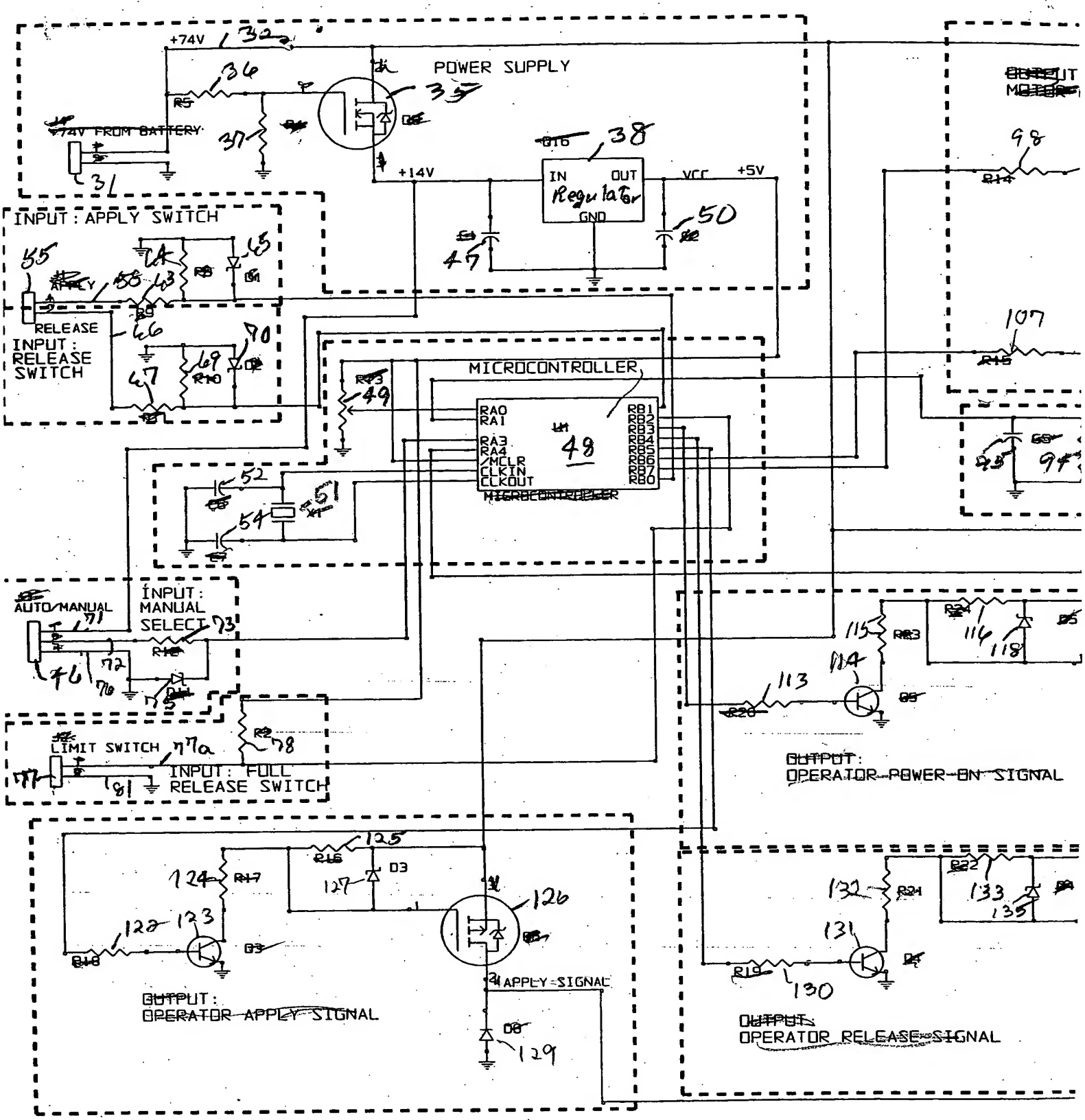

+74V
32
POWER SUPPLY
36
35
+74V FROM BATTERY
37
31
38
+14V
IN
OUT
Regulator
GND
VCC
+5V
50
47
INPUT : APPLY SWITCH
55
56
43
45
APPLY
RELEASE
INPUT : RELEASE SWITCH
66
70
69
R10
67
MICROCONTROLLER
49
RA0
RA1
RA3
RA4
/MCLR
CLKIN
CLKOUT
48
RB1
RB2
RB3
RB4
RB5
RB6
RB7
RB0
52
54
51
98
R14
107
R15
AUTO/MANUAL
INPUT : MANUAL SELECT
71
73
76
72
75
R2
78
LIMIT SWITCH
77a
77
81
INPUT : FULL RELEASE SWITCH
115
R23
116
118
114
113
R20
OUTPUT : OPERATOR POWER ON SIGNAL
125
R16
124
R17
127
D3
122
123
R18
126
APPLY SIGNAL
D8
129
OUTPUT : OPERATOR APPLY SIGNAL
132
R21
133
135
131
R19
130
OUTPUT : OPERATOR RELEASE SIGNAL

Fig 8a

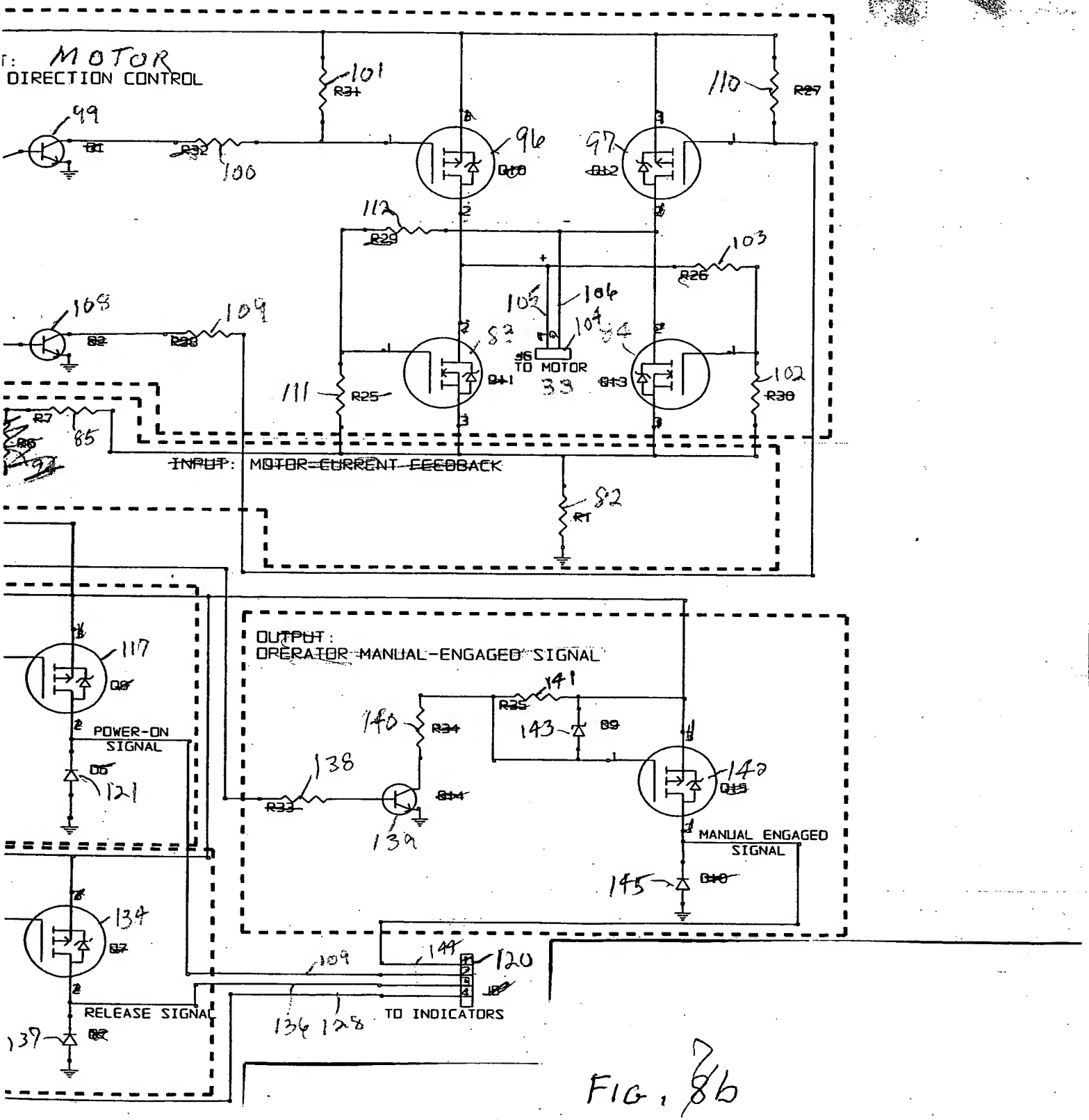

MOTOR
DIRECTION CONTROL
99
101
R31
100
96
97
110
R27
112
R29
103
R26
105
106
107
108
109
111
R25
102
R30
85
INPUT: MOTOR CURRENT FEEDBACK
82
TO MOTOR
117
POWER-ON SIGNAL
121
OUTPUT:
OPERATOR MANUAL-ENGAGED SIGNAL
141
140
R34
143
138
R33
139
142
MANUAL ENGAGED SIGNAL
145
134
RELEASE SIGNAL
137
144
120
136
128
TO INDICATORS

FIG. 8b

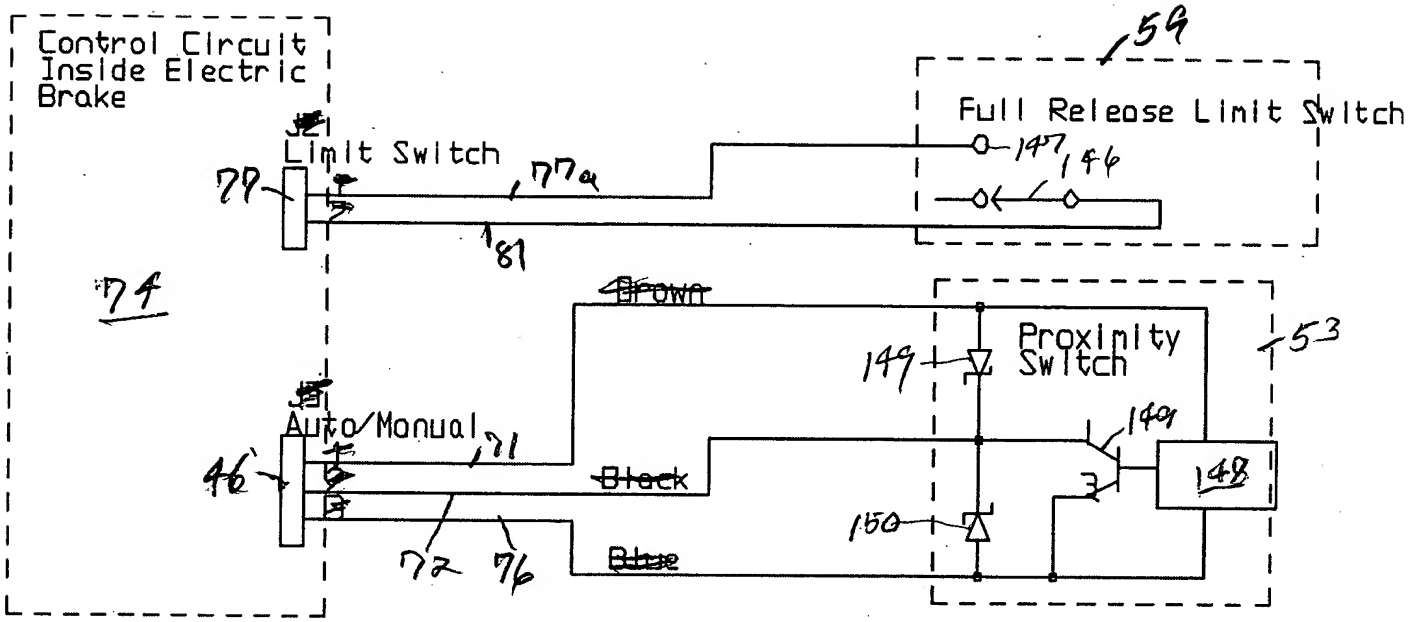
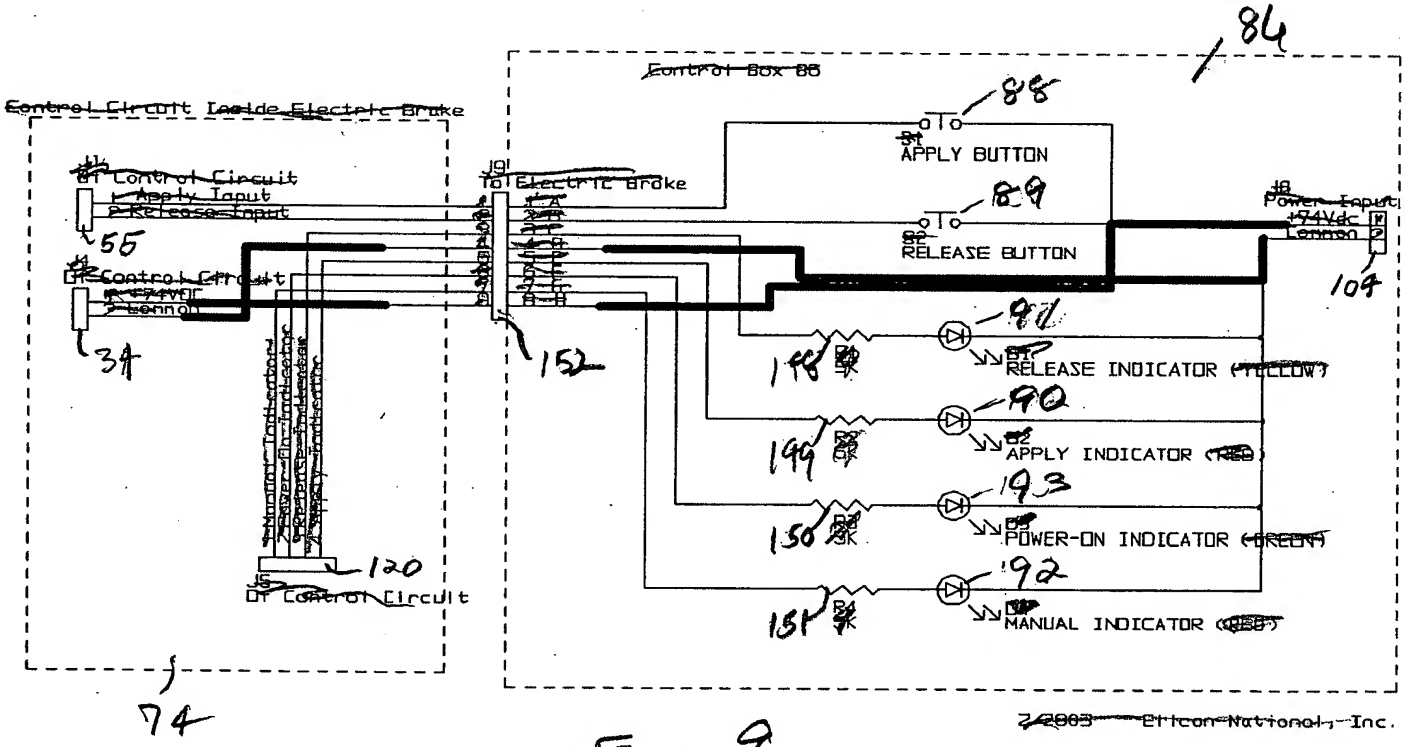


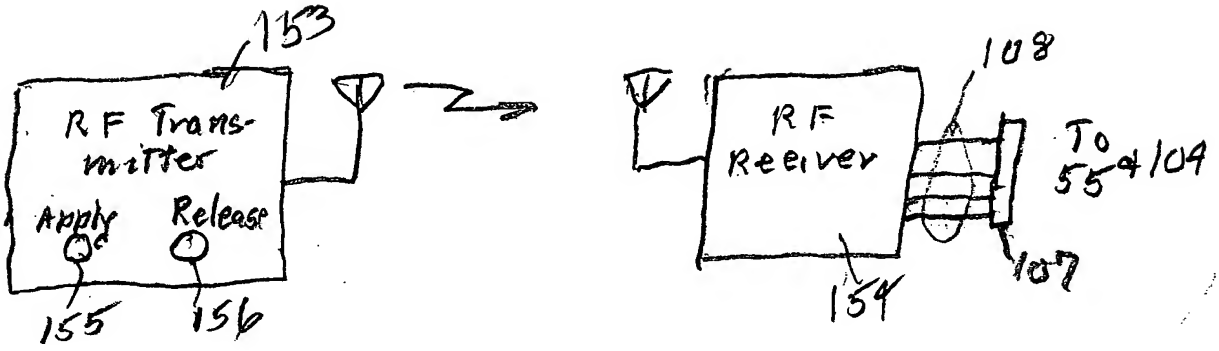
Fig 8 ~~2/2003~~ ~~Ellcon National, Inc.~~



~~2/2003~~ ~~Ellcon National, Inc.~~

Fig. 9

FIG. 10


153
RF Trans-
mitter
Apply
Release
155
156
RF
Receiver
108
To
55
104
107
154